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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

STINSON, FRANKIE L

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,553

Applicant(s)

JEONG ET AL.

Examiner

FRANKIE L. STINSON

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 8-22 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 8-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/1/2005.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. In view of the telephone interview of May 2, 2005, where it was noted that the examiner had promised to consider the withdrawn claims 10-21 as well as claims 1-9 and claims 20-22, this Office Action supersedes the Office Action dated April 25, 2005 for that purpose.

2. In view of applicant's remarks filed April 1, 2005, the Final Rejection dated December 1, 2005 is hereby withdrawn in favor of the action that follows below.

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 9, line 2, the phrase "the structure" is without proper antecedent basis.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 4 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stone (U. S. Pat No. 2,864,175) in view of either O'Neil (U. S. Pat No. 2,608,769), Warhus (U. S. Pat No. 2,881,633), Kim et al. (U. S. Pat No. 5,983,420) or Czech (U. S. Pat No. 2,940,179).

Re claim 1, Stone is cited disclosing a washing machine comprising.

a first tub(3);

a second tub (2) disposed in the first tub;

at least one circulation duct (27, 44) operatively coupled with the first tub to receive

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air from the second tub, dehumidify the air and recirculate the dehumidified air back into the second tub to dry laundry in the second tub during a drying operation of the washing machine; and

a water supplying duct (60, 71, 80) for supplying external water to a part of the inside of an inner wall of the at least one circulation duct to flow down the inner wall (see col. 5, lines 26-43) from said part and come in contact with air received in the duct to dehumidify the air in the at least one circulation duct, that differs from the claim only in the recitation of the water supplying duct supplying water to an *upper* part of the circulation duct. Given the arrangement of the duct (see fig. 1) in Stone with the circuit starting at the bottom of the tub as at 27, extending upwardly to the fan 41, the position of the duct (60, 71, 80) could be considered to meet the limitation of the "upper part", nonetheless, the patents to O'Neil (as at 124, see fig. 5), Warhus (as at 29, see fig. 1), Kim (as at 24, see fig. 1) and Czech (as at 78), are each cited disclosing that it is old and well known to position in a drying circuit/duct, a water supply in an upper part their respective circulation duct. It therefore would have been obvious to one having ordinary skill in the art to modify the position of the water supplying duct (60, 71, 80) in Stone, to be positioned in an upper part of the circulation duct as taught by either O'Neil, Warhus, Kim or Czech, for the purpose of increasing the length of time the moisture laden air from the tub, contacts/mixes with the cooling/condensing water, thereby increasing the amount of moisture removed from the air traveling there through. This effectively creates a longer/larger cooling surface area of the duct. Re claim 3, Stone discloses the fan (41) and heater(48). Re claim 4, Stone discloses the fan as a *sirocco* type fan. Re

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claim 20, Stone discloses the drain duct (55). Re claim 21, Stone discloses the spaced location as claimed. Re claim 22, Czech discloses the plurality of grooves (75).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claim 1 above, and further in view of Japan'857.

Claim 8 defines over the applied prior art only in the recitation of the plural helical grooves provided at an inner wall surface of the circulation duct. Japan'857 is cited disclosing a circulation duct have a helical groove therein. It therefore would have been obvious to one having ordinary skill in the art to modify the device of Stone, to include a helical groove as taught by Japan'857, for the purpose of efficiently discharging a large volume of condensate. To employ a plurality of helical grooves is deemed to be a mere duplication or parts (see MPEP 2144.04 REVERSAL, DUPLICATION OR RE-ARRANGEMENT OF PARTS).

7. Claims 9, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claim 1 above, and further in view of WIPO'169 (WO 93/17169).

Claims 9 and 11 define over the applied prior art only in the recitation of a fan, for supplying of external air to an outer surface of the circulating duct. WIPO'169 (see fig. 4) is cited disclosing a fan (19) for supplying external air to the outside surface of the circulating duct as claimed. It therefore would have been obvious to one having ordinary skill in the art to modify the device of Stone, to include a fan as taught by WIPO'169 for the purpose of enhancing the water removal efficiency of the condenser. Re claim 17, no patentable distinction is deemed to exist between the fan as claimed and the fan as

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taught by WIPO'169. The same are the functional equivalent of each other in that they both are employed to move external air to circulation duct for dehumidification purposes.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claim 1 above, and further in view of Kim (U. S. Pat. No. 5,277,210).

Claim 12 defines over the applied prior art only in the recitation of fins on the circulation duct. Kim (see fig. 1 and 2) is cited disclosing that it is old and well known to provide external fins on a circulation duct in a washer/dryer. It therefore would have been obvious to one having ordinary skill in the art to modify the duct of Stone, to include fins as taught by Kim, since it is old and well known in the art to employ fins on a dehumidifying duct for the purpose or dissipating heat for a heat exchange function.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claim 1 above, and further in view of Akabane et al. (U. S. Pat. No. 5,207,764).

Claim 19 defines over the applied prior art only in the recitation of the pulsator being operatively coupled to the first and second tubs. Akabane is each cited disclosing the pulsator (15). It therefore would have been obvious to one having ordinary skill in the art to modify the device of Stone to include a pulsator as taught by Akabane, for the purpose of enhancing the washing efficiency. It is old and well known in the art that for best dirt/stain removal, clothes are frictionally engage with a rubbing/scrubbing device for physically removing the dirt/stain.

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10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brucken et al. (U. S. Pat. No. 3,216,126) in view of either Cline (U. S. Pat. No. 2,818,719 or Krupsky (U. S. Pat. No. 3,402,576).

Re claim 10, Brucken is cited disclosing a machine, comprising
a tub (18):

at least one circulation duct (50, 64) operatively coupled to the first tub to receive air from the tub, dehumidify the air and recirculate the dehumidified air back into the tub to dry laundry in the tub during a drying operation of the machine;

an external air supplying duct (as at 82) for supplying external air towards the at least one circulation duct, said external air supplying duct has having an outlet disposed in the said at least one circulation duct; and

an air fan disposed to draw the external air into the external air supplying duct that differs from the claim only in the recitation of the device being combined with a washing machine which includes a first tub disposed in a second tub and an external fan near disposed at an inlet area of the external air supplying duct. The patents to Cline and Krupsky are cited disclosing that it is old and well known to provide an apparatus, which comprises a washing machine, which includes a first and second tub with a circulation duct such that the duct receives air from the second tub to dehumidify and return the same to the second tub. It therefore would have been obvious to one having ordinary skill in the art to modify the device of Brucken, to include the items associated with the washing machine as taught by either Cline or Krupsky, for the purpose of providing for a washing and drying process in the same unit. As for the

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external air fan, in the arrangement of Brucken, external air is forced into the circulation duct by the fan already, to employ a second fan, or relocated the fan to the entrance, is deemed to be a mere extension/duplication of the teachings of Brucken (see MPEP 2144.04 REVERSAL, DUPLICATION OR RE-ARRANGEMENT OF PARTS).

11. Claims 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (U. S. Pat. No. 3,091,955) in view of either Hoffman (U. S. Pat. No. 3,618,344) or Brucken (U. S. Pat. No. 2,863,311).

Re claim 13, Taylor is cited disclosing a washing machine, comprising.

a first tub (20);

a second tub (22) disposed in the first tub;

a structure (156) operatively coupled with at least one of the first and second tubs

to receive air from the second tub, dehumidify the air and recirculate the

dehumidified air back into the second tub to dry laundry in the second tub during

a drying operation of the washing machine;

a feed water valve (89) for supplying external water to the washing machine; and

for discharging the external water to inner walls of the first tub to dehumidify air in the first tub during the drying operation that differs from the claim only in the recitation of the discharging the external water through a tub cover. Hoffman and Brucken are each cited disclosing an arrangement of providing a tub cover (see fig. 2 in Hoffman and see fig. 5, 123, 102) having associated therewith, discharging means for discharging water to the inner wall of a first tub. It therefore would have been obvious to one having ordinary skill in the art to modify the cover (26) in Taylor, to have water discharging

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means as claimed, since this is consider a rearrangement of parts. Re claims 14 and 15, Taylor inherently discloses a water-supplying duct between the feed valve and the plurality of spraying holes on the bottom of the cover as proposedly modified.

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applied prior art as applied to claim 13 above, and further in view of Kim U. S. Pat. No. 5,277,210).

Claim 16 defines over the applied prior art only in the recitation of the cooling fins on an external surface of circulating duct. Kim is cited disclosing the cooling fins (101) as claimed. It therefore would have been obvious to one having ordinary skill in the art to modify the duct in Taylor, to include cooling fins as taught by Kim, for the purpose of exchanging heat between the moisture laden air inside the duct and the air surrounding external surface of the duct as is common in the art.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over WIPO'169 in view of Matsumoto (U. S. Pat. No. 5,768,730) or Japan'293 (Japan'59-183293).

Re claim 18, WIPO'169 is cited disclosing a washing machine, comprising:

a first tub;

a second tub disposed in the first tub;

multiple circulation ducts (see fig. 4) operatively coupled to the first tub to receive air from the second tub, dehumidify the air and recirculate the dehumidified air back into the second tub to dry laundry in the second tub during a drying operation of

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the washing machine that differs from the claims only in the recitation of the single cooling fin. Matsumoto (as at 315) and Japan'293 are each cited disclosing the arrangement of providing in a circulation duct with cooling fins. It therefore would have been obvious to one having ordinary skill in the art to modify the device to include fins as taught by either WIPO'169 or Japan'239, for the purpose of increasing the exchange of heat. As for the single fin, while not disclosed by the applied prior art, it is old and well known in the art, through routine experimentation, to find an optimum fin number with respect to the type of fluid, the flow rate, and heat exchange coefficient of materials used.

14. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In Japan'486, Jang, Geldhof et al.'344, Kim'552, Bruncken'662, George, Izeke, Jacobs, Pfeider, Pugh and Roh et al., note the washing, drying and/or dehumidifying arrangements.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANKIE L. STINSON whose telephone number is (571) 272-1308. The examiner can normally be reached on M-F from 5:30 am to 2:00 pm and some Saturdays from approximately 5:30 am to 11:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached on (571) 272-1700. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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FRANKIE L. STINSON
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GROUP ART UNIT 1746